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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

REPORT FOR WEEK ENDING OCTOBER 6, 1923.

HUNTLEY:

The rainy weather of a week ago extended into the first few days of the present week. As it has been cloudy and foggy much of the time since then, the drying up of the surface soil has been slow and no field work has been possible. These conditions have been very favorable for the germination and growth of weeds and volunteer grain, so that all fields now present a decidedly green cast. Farmers report much damage done to beans which had been harvested and left in piles or stacked. Unthrashed wheat in the shock is in many cases nearly a total loss while that which had been stacked did not suffer so much.

Maximum temperature 68, minimum 36; precipitation .94 inch.

SHERIDAN:

The rain of last week finally terminated on the evening of the 30th, with a total of 6.67 inches for the four days' rainfall. This is the heaviest rainfall yet recorded here, and brought the total for September up to 9.35 inches. Considerable damage resulted from the heavy rain. The most of the grain still unthreshed is badly damaged, headed stacks being soaked nearly to the bottom, and shocked grain is growing badly. Considerable damage resulted to land and buildings along the creek bottoms, as the most of the creeks rose to unusually high levels.

Forage crops in shock on the station seem to be in fairly good shape and to be drying as well as can be expected here at this period of the year. The varieties of corn are now being husked.

Winter wheat in the Rotations emerged on the 30th. Considerable volunteer grain is present on the continuously cropped plats. The October 1 seeding of winter wheat was made today, the ground being too wet for team work before.

Maximum temperature 62, minimum 36; precipitation 2.34 inches.

DICKINSON:

A rain of .35 inch on the night of September 30 increased the total for the month to 4.55 inches making a new maximum for the month in 32 years' records. Mild temperatures have continued with so much cloudiness that grain in the field has not dried so that threshing could be resumed. Much flax is still unthreshed and some other small grain.

Rotation corn weighed during the week averaged 434.5 pounds of grain and 403 pounds of stover on the 39 plats. At 30 pounds a bushel the yield is 54.3 bushels of grain per acre. Samples of both grain and fodder were taken for determining the air-dry weights as a basis for final yields.

Dickinson, continued:

Two plats of Ohio potatoes on the rotations yielded at the rate of 282.5 and 300 bushels respectively.

Mr. T. K. Killiand of the Northern Great Plains Field Station came up on the 5th to make plans for the improvement of the station grounds.

Director P. F. Trowbridge, North Dakota Experiment Station, visited the station on October 5.

MANDAN:

Horticulture.

Potatoes were harvested on October 3 and 4. Fields were generally poorer than last year. Early Ohios were particularly poor and knobby. Irish Cobbler and Pink Eye potatoes were the best yielders. In the spacing experiment the 20-inch spacing gave the best results. As was the case last year, there was a marked difference in yields of the same variety from different sources.

Other work during the week included hilling up this year's buds, pulling out worthless seedlings from orchards and breeding blocks, and pruning small fruits.

Arboriculture.

On October 3 the small nursery block in Field E, was planted to Russian Olive. A part of the seed used was cleaned before planting by rubbing off the pulp and washing and drying. Alternate rows of cleaned and uncleaned seed were planted in about half of the field.

Tree pulling has been in progress for the remainder of the week. All Northwest poplar have been pulled and half of the ash. The first fumigation will be done on October 11, when Mr. R. L. Webster, Entomologist at the North Dakota Agricultural College, will be here as a representative of the Federal Horticultural Board to inspect nursery stock.

Maximum temperature 71, minimum 32; precipitation, Trace.

ARDMORE:

The weather condition throughout the weekwas very favorable for the prosecution of farming operations. The heavy rains of the previous week have put the ground in exceptionally good condition for fall plowing. This work is being done at the rate of approximately 12 acres per day, using one four-horse team, one six-horse team and two tractors. About two hundred and fifty acres are to be fall plowed on the station.

Ardmore, continued:

Corn husking of the rotation plats has been started, but no weighing of grain has been done so far.

Weather is exceptionally mild and warm for this time of the year. Up to the present time there has not been a killing frost.
Maximum temperature 68, minimum 35; precipitation .08 inch.

ARCHER:

The week has been one of continued storm with mild temperatures, the precipitation being as follows:

Sunday, September 30	.13 inch
Monday, October 1	.04 "
Tuesday, October 2	.21 "
Wednesday, October 3	.05 "
Thursday, October 4	.17 "
Friday, October 5	.01 "
Saturday, October 6	.37 "

This condition permitted of but little field work hence the cutting of corn was, of necessity, discontinued. At this writing the prospects are for fair weather. As yet there has been no frost at the station.
Maximum temperature 64, minimum 39; precipitation .95 inches.

NORTH PLATTE:

September closed with a total precipitation of 1.40 inches on the table, which is a deficit of .10 inch and the first deficit for any month since April. The accumulated excess for the year to date is 5.89 inches according to the station table gauge and 3.25 inches according to the North Platte Weather Bureau.

The average date of first killing frost is October 3. We are now three days past this date and the lowest minimum so far recorded is 37 degrees.

All seedings of winter wheat on the station emerged in from six to ten days and have made a very rapid growth.

COLBY:

Weather conditions have remained unfavorable for field work the most of the present week. It rained on Tuesday and Wednesday, most of each day, and it has been raining practically all day today. While there have been no heavy rains the moisture falling as a gentle drizzle most of the time, the total precipitation has amounted to 1.99 inches for the week. This rainfall coming after the good rains the last of September have thoroughly soaked all the wheat fields. Winter wheat is growing fine.

Colby, continued:

To date we have not had a frost. In this respect we have been very fortunate as the sorghum crops have not ripened appreciably in the last month. Corn is practically all out of danger of frost in this section of the state. There are a large number of green leaves in most corn fields even at the present time. Milo is far enough advanced on the D.L.A. project so that there would be excellent yields even should frost come at once. As a matter of fact milo plants are still green on most of the plats. With the moisture which we have now they probably will be until frost now.

Mr. H. L. Westover, of the Forage Office, visited the station today. As it was raining most of the day it was disagreeable for a study of the different plats, although we did examine our sorghum plats, especially the sweet milo.

Minimum temperature this fall, 36 degrees; rainfall for the year to date 25.33 inches.

GARDEN CITY:

Weather conditions have been decidedly unfavorable for field work during the past week. Monday was a fairly clear day, but since that time the sun has not been seen. While no large amount of precipitation has been received the weather has been foggy most of the time. On Monday night .61 of an inch of rain was received, on Wednesday night .3 of an inch, and on Friday night .3 of an inch. Traces of precipitation were received on each of the other days.

All plats to be seeded to winter wheat were prepared for the drill on Monday. It will take at least two days of sunshine before wheat seeding can be begun. Winter wheat in the general field is looking good.

Sorghums are looking good in most cases. The sorghums on the station will be ready to cut as soon as the weather will permit. Corn on the dry land project was cut on Monday.

Maximum temperature 71, minimum 51; precipitation 1.21 inches.
Total precipitation to date 32.6 inches.

DALHART:

The rain maker has been working overtime this week. It has rained each day during the entire week up to today, Saturday. The rains recorded, beginning Monday night, ending Friday night are as follows: 0.57, 1.12, .12, .48, and 1.38 inches. Total for the week is 3.67 inches. This brings the rainfall for 1923 up to 28.00 inches with three months yet to go. The wind movement has been very slight, averaging something like four miles per hour for the week. The prevailing wind direction has been the north and the northeast. Today it has switched back to the southwest. This is a pretty good indication that the weather will settle and clear up. It has been rather cold all week and fires were necessary for comfort.

Dalhart, continued:

The crops have made practically no headway during the week toward maturity. The excessive rainfall is causing the ripened grain to turn black in the field. Cowpeas that were harvested a month ago and some that were harvested last week are in bad shape. There has been so much rain that there has been considerable molding. This is an exceptional year for this to occur. As a rule cowpeas can be cured and stacked without the slightest damage. From present indications the cowpea hay will not make very good feed. There are quite a few of the sorghum varieties that are ready to harvest but can not be touched until the fields dry off sufficiently to allow the use of the binder. At that some may have to be harvested by hand. Sudan grass on the first four dates and red amber in the varieties are nearly ready for a second cutting. The last date of broomcorn is ready to harvest but will have to be delayed until next week, or until dry weather.

Cotton in this section is going to be classed mostly as bollies. The Dalhart people are getting ready to put up a cotton gin to take care of the cotton crop. The writer is not informed as to where the labor is coming from to gather the bollies. Labor is none too plentiful for the other crops let alone cotton. One boll is noticed in the station variety planting that is nearly ready to open. One farmer near the station has cut his cotton and made silage of it according to a recent report. As the conditions stand at present cotton will not be the leading crop for 1923.

Maximum temperature 78, minimum 49; precipitation 3.67 inches.
Average wind velocity 4 miles per hour.

TUCUMCARI:

October to date, with 4.92 inches of rain, is higher in precipitation than any October since records were begun in 1905, and 3.69 inches higher than the 1.23 inches average over this period of years. Precipitation the past five days has been as follows: 0.53, 1.09, 2.41, 0.28, and 0.61 inches. As a result of this excessive rain, field work has been impossible much of the time. The new grain binder was set up, corn binder repaired, cowpea seed threshed, and other miscellaneous inside work done. The garden web worm has seriously attacked the cotton and all plats have been sprayed four times, each time rain coming before the worms had eaten the poison. The night of the 5th rain and hail, accompanied by a very heavy wind, did considerable damage to most station plats. Cane was lodged extensively, all sorghums stripped to some extent, and kafir heads badly shattered. Doubtless cotton bolls were injured so seriously that many of them will not open normally.

Cane for silage and fodder is not ready for harvesting, but is seems best to start filling silos as soon as it is possible to get in the fields, due to frost danger. Increase kafir, as well as most plat kafir, has a great number of heads now in bloom, growing from late suckers and branches which came out after the rains the middle of August. Grain yields of kafir will be low unless warm weather continues for practically a month.

Tucumcari, continued:

More rain has fallen over a great portion of the Southwest in the past week than in a like period for many years. Roads are impassable in many places and railroad bridges have, in numerous places in this state and Texas been washed away. Farmers are discouraged, but no more downhearted than ranchers, who claim the excessive rain at this time of the year will result in very poor grazing throughout the winter as the grass will be immature and washy.

Maximum temperature 85, minimum 48; precipitation 4.92 inches.
Evaporation 1.332 inches. Average wind velocity 4.1 miles per hour.

WOODWARD:

The past week has been another week of almost continual daily precipitation, with a total for the week of 6.93 inches.

Since the 1st of January we have had a total of 31.35 inches, this being 6.77 inches above the 23-year annual average. Most of this rainfall has come during two periods; during April, May and the early part of June we had 14.62 inches, and from the 19th of June to the 11th of September we did not receive enough precipitation at any one time to be of any material value. During the other period, from September 11 to October 6 we received 14.23 inches.

On account of the extremely dry and hot weather from the middle of June to the early part of September, row crops in this section are almost a failure.

On Tuesday, the 2nd of October, about 6 p.m. there was a very severe hailstorm which passed to the south and west of the station. While considerable damage was done on the station, such as stripping leaves from the cotton, splitting up leaves on row crops, which were not yet harvested, we apparently received only one edge of the storm as it was reported from points nearby where it was the heaviest as having drifted a foot or more in depth. One man reported that four miles south of town he got stuck in his auto in the hail, and even with his chains on could not pull through, so put his chains on wrapped around the tires in a big ball, and got through in that way.

Winter wheat, which was planted lately, is up to a good stand. There is considerable volunteer wheat in this section and a good deal of it is just about the proper stand and came up at about the proper time, so will be left for a crop.

Most of the work around the station during the week has consisted of filling up holes in the roads washed out by the heavy rains, also some other work on the roads, repairing machinery, and other odd jobs. The remainder of the grapes and peaches were picked. We had a total of over 10000 pounds of grapes for the season.

Maximum temperature 78, minimum 52; precipitation 6.93 inches.
Average wind velocity 4.7 miles per hour.

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OCT 1 0 1923

REPORT FOR WEEK ENDING OCTOBER 13, 1923.

HUNTLEY:

Rainy weather during the first half of the week was followed by the first recorded frost of the season when the minimum temperature reached 30. This frost date is about two weeks later than the average for the station.

Clearing weather has followed the change in temperature but the ground is still too wet to work. The continued periods of wet weather during the last month have enabled winter wheat sown before the rains to make a luxuriant growth. In some instances farmers are pasturing the wheat where it is especially heavy.

Maximum temperature 72, minimum 30; precipitation .56 inch.

SHERIDAN:

Cloudy weather accompanied with rain at times prevailed from the 9th to the 11th. Further drying of forage crops and unthreshed grain in the field was prevented, and grain which had been dried sufficiently to thresh was wet again.

About one-third of the corn in the Rotation field was husked before the last rains. None of it was dry enough to weigh. All of the Sudan grass and the most of the sorgo has been hauled and shocked in long ricks near the buildings to facilitate drying.

Damage to farmers from the heavy rain was greater than thought at first. Much hay was spoiled by the stacks being wet through, and the lower part of many stacks was under water for a considerable period. New straw stacks also were wet through badly and much of the straw spoiled.

The first killing frost occurred yesterday morning, the 12th, when the temperature went to 32 degrees.

Maximum temperature 71, minimum 29; precipitation .77 inch.

MANDAN:

Agronomy.

The past week has been unfavorable for field work. Corn shredding, which started a week ago, has been delayed because of wet weather. The plats that were shredded yielded between 50 and 60 bushels to the acre. The indications are that the average yield of corn will be ten to twenty bushels per acre higher than the previous highest average produced at this station.

Winter wheat and winter rye have made a good fall growth, and are in better condition than usual at this time of year.

The first hard freeze of the season came on the night of October 12, when the temperature dropped to 26 degrees. A high wind blew all day on the 7th, and was followed by rain. Rain was recorded on five days of the week.

Maximum temperature 63, minimum 26; precipitation .53 inch.

Mandan, continued:

Cooperative Grazing Experiment.

The brome grass has made considerable growth in the pasture during the past two weeks. The steers were off the pasture for ten days. The indications are that it will carry them for the rest of the season. The steers in the brome grass do not appear to be putting on the "finish" that is noticeable with those in the other pastures.

The dam in the reserve pasture contains plenty of water for the cattle in that pasture.

Horticulture.

Vegetables have been stored for the winter. Bulbs from the ground have also been dug and stored. Seed from tomato selections has been cleaned.

All seed from this year's crossing work was planted in flats, and the flats are to be left outdoors and mulched during the winter.

Grapes in the seedling selection blocks have been dug, pulled out, and put in piles for burning.

Dr. R. L. Webster, State Entomologist at the North Dakota Agricultural College, has been with us the latter half of the week, superintending the fumigation of the trees which are being dug for shipment to shelterbelt cooperators next spring.

Visitors of the week included Mr. F. Benz, Head Agricultural Agent, Northern Pacific Railway.

BELLE FOURCHE:

The weather continues cold and wet. The soil has not been dry enough to permit field work since September 20 and even under the most favorable circumstances will not be dry before the last part of next week. Harvesting beets and potatoes promises to be extremely difficult. Usually the harvest is about half completed by this time. This year nothing has been done and no harvesting of these crops will be possible for at least another week.

The stand of winter wheat and winter rye is nearly perfect on all plats. With warm weather from now on these crops should make an unusually heavy fall growth.

The first generally killing frost of the season occurred on the night of October 12. The last killing frost in spring was on May 15. This makes a frost free period of 150 days, or nearly two weeks above the average.

Bellefourche, continued:

A rain of 1.23 inches fell on October 10 and 11. It fell slowly and steadily but the soil was already saturated with moisture so most of it was lost by run-off.

The maximum temperature for the week was 71 degrees, minimum 25 degrees, and the precipitation was 1.27 inches. The precipitation for the year to date is 25.11 inches which is only .77 inches lower than the highest annual rainfall previously recorded.

ARDMORE:

The surface soil was too wet for fall plowing throughout the entire week except on Saturday. Corn husking has been in progress and much work was done in building corralls and fences used in connection with beef cattle work. The corn that was husked has not been weighed.

The first killing frost of the season occurred on the night of October 13. This was the latest date of a killing frost since this station has been in operation except in 1915 when the first killing frost of the season occurred on the same date of the month. It will be recalled that the fall of 1915 also was exceptionally wet.

Maximum temperature 66, minimum 24; precipitation .73 inch.

ARCHER:

With the exception of the last days the weather has continued wet and cool. This condition has prevented field work to any great extent. However, all corn on Dry-land and variety plats has been cut and all corn cut which was not put into the silo has been shocked. There remains but a small field of corn to be cut. Large yields of this crop are being secured.

The first killing frost occurred this morning, October 13, with a temperature of 23 degrees. The lowest previous temperature, 29 degrees, was recorded October 12.

The potatoes on the Dry-Land plats are being dug on this date.

NORTH PLATTE:

The first frost of the season occurred last night, October 12, when the temperature dropped three degrees below freezing. October rainfall to date is already about 50 per cent above normal. Corn is well matured but the ears are large and continued wet weather has made drying slow. The large amount of moisture present makes the risk of freezing injury to seed much greater than usual.

North Platte, continued:

The station is sending out a warning, through the press, to farmers to dry their seed. North Platte challenges the Great Plains to match its dry land corn yields for this year. Four plats were husked during the week which produced an average yield of 63.3 bushels of dry shelled corn per acre. It is thought that the 81 plats on the D.L.A. project will run close to this average.

HAYS:

The wet weather prevented any field work being done during the week. Sorghums which have been harvested and are in the shock are beginning to damage very much in places by mold and in other places by growing. Sorghums which have not been harvested are beginning to mold in the head. Some wheat sown just previous to the rains is reported to be rotting, so that the stand is spotted. I think, however, this condition is not general, but the fields are in need of some sunshine and higher temperature until it gets started.

Cool, cloudy and rainy weather continued throughout the week. Maximum temperature 60, minimum 53; precipitation 1.66 inches.

GARDEN CITY:

The past week has been so rainy that no field work could be accomplished. Rain fell on five of the seven days and at least a part of the other two days was cloudy. The seedbed for winter wheat is ready for the drill, but it will be at least three days before any planting can be done. The sorghum crops are ready to cut. Some of the milo has gone down and the seed in the heads is sprouting. Wheat in the date of planting test is looking good.

Maximum temperature 73, minimum 36; precipitation 1.11 inches.
Total precipitation for the year 33.71 inches-- 16.14 inches above the normal.

DALHART:

Another week has passed with plenty of rain and cloudy weather. There were two days during the week that no precipitation was recorded. Water is standing in the fields in many places. The temperature is getting to a very uncomfortable location on the thermometer. Last night registered 35 and the wind is in the north. The wind the past two days has been cold. All day Friday the wind was in the north and a steady mist was falling most of the time and a hard rain at spells. Unless the wind gets back into the south today it is very likely that a good freeze will occur tonight as the clouds are beginning to clear away.

Dalhart, continued:

Bundle feed that has been harvested and shocked is in a bad state for feed. Several tons of Sudan grass was harvested last month and is now black with mold. There has not been sufficient sunshine to give it a chance to cure. Some of the standing crops will do to harvest as soon as the fields will permit but others have about as much immature grain as mature. If a frost occurs without any warm days of sunshine there will be considerable that will not do to thresh at all.

Maximum temperature 78, minimum 35; precipitation 1.51 inches.

TUCUMCARI:

While only 1.16 inches rainfall has been received the past week, this has fallen in such manner that it has been impossible to do much field work. Much of the rain has fallen slowly, with mist much of the time and precipitation has been received four of the past seven days. Total precipitation for the month to date is 6.08 inches, while the average for October has been only 1.23 inches and the previous high October was 1920, 3.68 inches.

It is now spitting snow and the temperature this morning was 37, so chances of killing frost are good. During the week it was possible to cut cane for filling one silo and this was filled Thursday, the only pleasant day of the week. Kafir is not ready for harvest, but cutting would be advisable if the plants were dry enough for cutting; the same holds true of most variety sorghum plats, the sorghum for steer feeding, and most of the broadcast. However, misty weather the past week has kept the plants soaked most of the time and cutting could not be done. A week or ten days of pleasant, warm weather would put practically everything in shape for cutting, for many heads would mature in that time. With the danger of frost so imminent, harvesting will be done as rapidly as possible when the plants are dried, so rotting in the bundle is not likely.

Cotton, which was injured by the hail is not opening, although this is probably partly due to the cold, damp weather. There is probably not over ten pounds of open seed cotton on the station plats, about three acres.

Maximum temperature 79, minimum 37; precipitation 1.16 inches.

Average wind velocity 6.4 miles per hour.

BIG SPRING:

A gentle rain fell on the night of October 4, totaling .92 inch. Although this stopped cotton picking for a few days and lowered the grade somewhat, it put the soil in fine shape for wheat planting. The station wheat was planted on October 6, and came up to a good stand on the 11th.

Big Spring, continued:

This week the work has consisted mainly of heading milo, picking cotton and hauling in Sudan grass. The milo in the increase fields is yielding nearly two tons per acre, which is very good for this country. Nearly all of the cotton has been picked over three times, but another picking will be necessary in order to get all of it.

The first norther of the season, accompanied by a drizzling rain, has charge of things today. Last night the temperature dropped 38 degrees within a few hours.

Maximum temperature 83, minimum 44; precipitation 1.07 inches.

LAWTON:

From September 15 to October 14, inclusive, the rainfall totals 8.68 inches. During this period there was but very little clear weather and fields and crops were wet most of the time. The only field work permissible and of any consequence was done October 3 to 11, inclusive.

One of the longest continuous periods of rainfall on record here is now being recorded. Rain began falling Friday, October 12 at 4.30 p.m. and steadily continues at the present date, Sunday, October 14, now totaling 4.41 inches. The rain is accompanied by a cold, northeast wind, averaging about 10 miles per hour. The temperature varies from 44 to 49 degrees.

The October 1 date of seeding of wheat in the rate and date test was done on October 8. Wheat, rye, and winter barley were also seeded in the rotation plats on the 8th and 9th. An excellent seed bed obtained in all instances.

The first picking of cotton on all but eight of the rotation plats was also made during the past week. From 15 to 20 pounds of seed cotton were obtained per plat.

Sorghum crops that are standing in the shock are in pretty bad shape. The second growth of stubble in in many instances from four to five feet high, and the shocks have dried very slowly.

The present prospects of getting these crops out of the fields in the near future are not at all encouraging.

The wet cool weather for the past month has been detrimental to cotton. The plants have continued to grow, the bolls have opened slowly, and the quality of the lint has suffered from the rains. There is now an excellent prospect for a lot of "bolly" cotton.

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OCT 20 1923

REPORT FOR WEEK ENDING OCTOBER 20, 1923.

HUNTLEY:

Clear weather has prevailed during the greater portion of the past week and the ground has dried out to the extent that the digging of potatoes and other root crops has been possible. So far these operations have been confined to the irrigated section of the station where the bulk of these crops are produced but it is expected that the crew will be available for harvesting the Dry-Land potatoes Monday afternoon.

Work on the dry-land fields has consisted of cultivating the fallow plats, preparing the ground for and seeding winter wheat varieties and rye.

Although farmers have taken the greatest advantage of the pleasant weather to catch up with their delayed fall work there still remains about 40 per cent of the winter wheat acreage to be seeded and a large amount of threshing of wheat and beans to be done. Corn cutting has been practically completed but little or no husking has been done in this locality, as yet.

The local schools have been ordered closed for two weeks to release the children for work in the harvest fields, principally to assist in getting out the potato and sugar beet crops.

Maximum temperature 70, minimum 24; precipitation .01 inch.

SHERIDAN:

The past week has been rather cool, cloudy at times, and with occasional light showers. On the whole, however, the period was decidely more favorable for field work than for some time past.

Potatoes in the variety test were dug early in the week. Yields have not yet been computed, but were fair. The quality, however, was only slightly better than in the rotation. A few potatoes planted on new breaking from a small amount of seed left over from the variety planting made a good yield of smooth potatoes of good size.

All but two plats of the corn in the rotations have been husked. Yields have not yet been computed, as both corn and stover still contained too much moisture for weighing as it was husked.

Maximum temperature 69, minimum 24; precipitation .07 inch.

DICKINSON:

Fair weather with mild temperatures has continued through the week and much field work has been cleaned up. Fodder of the corn varieties was weighed, root crops were dug and stored and the balance of the threshing completed. Some time was spent in preparing for spring planting of trees and shrubs on the station grounds.

Dickinson, continued:

About 20 per cent of the grain on farms was unthreshed during the rainy weather and was badly damaged, much of it having sprouted. The price being received for this damaged is 15 to 20 cents a bushel less than No. 1 grade.

Winter wheat and rye have made an excellent growth. More plowing has been done on farms than during any fall of the last five years.

Visitors included President John Lee Coulter, of the Agricultural College, and President E. G. Quamme, of the Federal Farm Loan Bank, St Paul.
Maximum temperature 68, minimum 19; precipitation 0.
Precipitation to date in October .70 inch.

MANDAN:

Agronomy.

The past week has been favorable for field work. Corn shredding started again on the 17th, and was completed on the 20th. The yields of ear corn run from about 45 to 65 bushels per acre, which is the highest yield of corn that has been obtained on the station to date.
Maximum temperature 71, Minimum 24; precipitation 0.

Cooperative Grazing Experiment.

The cattle are still on their pastures and appear to be doing fairly well. The brome-grass has made considerable growth during the past two weeks, and is furnishing good grazing at the present time. The cattle, however, do not look as good as those on some of the other pastures, but may be putting on gains. The grazing experiment will be closed for the season next week.

Arboriculture.

Inspection, fumigation and heeling in of hardwood nursery stock, was completed on October 19. Material for making Northwest poplar cuttings will be all collected by the end of the week. There is apparently more of this material than we had last fall. With the digging of a field of Jack and Scotch pine, the fall work will be completed.

The following quantities of the several species are on hand:-

Northwest poplar	47,770
Green ash	47,660
Box-elder	28,265
Russian olive	5,217
Wild plum	1,050
Choke-cherry	250

Mandan, continued:

The following species were raised in seedbeds for specie testing purposes:-

Black walnut	410
Burr oak	100
Basswood	50

Mr. R. L. Webster, State Entomologist at the North Dakota Agricultural College, was with us the latter part of the week, supervising the fumigation of the remainder of the trees which have been dug for shipment to shelterbelt cooperators next spring.

BELLE FOURCHE:

This has been another week when field work has been nearly impossible. The soil dried enough so that plowing was possible for half a day on Thursday. Thursday night and Friday rain and snow fell saturating the soil once more. The total amount of precipitation on these two days was only .49 inch, but the soil was already so wet that it saturated the soil as thoroughly as a larger amount would have done. No beets or potatoes have been dug as yet and present indications are that it will be impossible to start digging these crops for several days yet.

The rainfall for October to date is 2.11 inches which is double the average for the month. The rainfall for the year to date is 25.66 inches.

The continued rains have damaged much of the grain in this section. Grain that has been in the stack for nearly two months wet in several feet during the recent rains and is sprouting badly. Grain still in the shock is practically ruined. For at least three weeks all grain has been so wet that no threshing has been done.

Maximum temperature 70, minimum 26; precipitation .55 inch.

HAYS:

The weather during the week has been generally damp and cool.

Although there was but little actual rainfall during the week, the ground was so thoroughly soaked by rains during previous weeks that it dried very slowly under the conditions that prevailed during the past week. Seeding of winter wheat, except for one block of reserve plats was finished yesterday, Friday. Rain in the afternoon prevented the finishing of all seeding.

There is some loss of stand of winter wheat seeded before the heavy rains by the seed rotting in the ground. It is the first case we have known of winter wheat rotting in the ground before it could germinate.

Hays, continued:

The continued wet weather has caused considerable loss to feed crops. Some of the standing sorghum has molded in the head, and some has sprouted in the shock.

Maximum temperature 67, minimum 33; precipitation .14 inch.

GARDEN CITY:

Almost ideal fall weather has prevailed throughout the past week. The first killing frost, a temperature of 29 degrees, was recorded on the 20th. Sorghum crops are beginning to show the effects of the frost and will likely be cut next week.

Wheat seeding was completed on Thursday. The seedbed on most plats was in good condition. Moisture samples were taken on the M. C. plats.

Silo filling is in progress on the general farm.

Maximum temperature 68, minimum 29; precipitation 0.

DALHART:

The past week has been very favorable for field work. There has been no trace of rain since Sunday night, when .02 inch was recorded. The remainder of the week has been clear for the most part and rather warm during the days. There has been a little more wind than in the past few weeks, helping to dry off the fields. There were three frosts during the week, two doing no damage and one killing many of the plants. The first two occurred with a minimum temperature of 34, the last at 32, which occurred Friday night.

On Monday while the fields were all too wet to work, most of the seed for next year's crops was gathered. This extended over Tuesday as well. By Tuesday parts of the field were dry enough to allow running the binder. The dry plats were picked out and crops harvested as fast as possible. The binder has been running continuously ever since. The experimental crops are all harvested that will allow the binder to operate on. There are only 16 plats remaining to be harvested. The little freeze of last night did not damage these plats. Only second growth plants and the more tender garden plants were damaged and these were not killed. As soon as the remaining plats dry off the crops will be harvested. Most of the field crops were harvested for feed during the week. There is still about a half day's cutting which is too wet in this field. A good crop of second growth Sudan was harvested Thursday and will make excellent feed to replace in a measure the first cutting which was practically ruined by so much rain. There will be plenty of bundle feed to feed the stock through in good shape. Some of the crops lodged badly due to so much rain and the plants being so tall. The grain nearly all matured so that a good yield will be obtained. Some of the suckers were rather green but most of them got far enough advanced to make good.

Dalhart, continued:

The cotton prospects are looking better just now than any time during the season. From present indications the cotton will open in good shape. Some is just beginning to open up. Twenty-two selections were made from the varieties of cotton for a breeding plat to be conducted next year. A plant to row test will be made. The contract is let for a cotton gin to be built in Dalhart to handle the 1923 crop. Prospects seem to be quite favorable over this section for a crop of cotton. If cotton should open in good shape it is a question as to where the labor would come from to handle it. The labor situation is critical in this section at present for handling the maize crop. Wages are going too high for the general good.

TUCUMCARI:

While the weather has been cool the past week, crops have seemed to ripen well and indications now point to better harvest conditions than were expected.

Cotton is opening to some extent and one picking will be made soon-- possibly this will be the only picking. Sumac cane is ripening slowly; while some heads are ripe, the great majority are in the milk or soft dough stage. Kafir in the north field rotations has many branched heads-- many heads have been ripe for six weeks, while others are now in the milk stage. A similar condition exists quite generally among the variety and date kafirs. This is more marked in the early varieties than in the late. Standard No. 71, Red, Pink, and Marum kafirs have very few branched heads, for dwarf heads had not formed when the rains came the middle of August. Thus these varieties put out large, late heads which will require a week or ten days in which to mature. Sunrise, Dawn, and Reed's had formed small heads when the rain came, so numerous late suckers and branched heads formed; in order that all heads may mature seed, these varieties will require several weeks of warm weather. Most other grain sorghum varieties have acted as the early kafirs, making it very difficult to determine when to harvest.

Counting of plants and stalks was completed this week; increase broadcast cane was cut and shocked, some increase Sunrise and Reed's kafir was cut, and about thirty date and variety plats harvested. Seed was selected from fifteen varieties and increase milo, kafir and feterita headed.

Forty-four head of yearling steers for use in the feeding experiment were received Monday and dehorned before being put on the pasture.

Mr. W. H. Black, of the Division of Animal Husbandry, visited the Station Wednesday and inspected the steers. En route to Big Spring, Texas, Mr. Black visited State College, New Mexico, for the purpose of discussing the experiment with college officials.

Maximum temperature 68, minimum 36; precipitation 0.43 inches.
Average wind velocity 3.1 miles per hour.

LAWTON:

Fair weather, most of the time, from the 16th to the 20th improved field and crop conditions. Deterioration in cotton during the excessive rains this month is very noticeable. A few farmers estimate it as much as 25 per cent. That percentage, however, except in flooded areas is probably a little high.

Picking was resumed on the station Friday afternoon and the first picking on all rotation plats and the variety test has been completed.

Very slight indications of frost were evident on the morning of the 21st. The minimum temperature, however, was only 38.

Precipitation for the month of October to date is 7.07 inches.

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WEEKLY STATION REPORTS

OF THE OFFICE OF

DRY LAND AGRICULTURE INVESTIGATIONS

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

OCT 27 1923

REPORT FOR WEEK ENDING OCTOBER 27, 1923.

HUNTLEY:

With the exception of Monday field work has been at a standstill because of rains and cloudy weather. Although the amount of precipitation was small conditions were not favorable for drying ground to a workable condition. Heavy frosts have occurred every night during the past week and some concern is felt for the potato crop which is still in the ground and for the late planted winter wheat which has not yet come up. In spite of the rainy fall, shock fodder and corn appears to be in excellent shape. It is planned to commence husking as soon as the ground will permit getting the corn weighed.

Maximum temperature 74, minimum 21; precipitation .53 inch.

SHERIDAN:

Favorable weather for getting in corn and forage crops continued over the first day of the present week. A light rain fell on the 23rd followed by snow on the 24th. Cold cloudy weather prevailed since, and about two inches of snow still remains on the ground.

Husking of the rotation corn was completed and all of the grain hauled and weighed while in fair condition. About two-thirds of the stover was hauled and weighed while in good condition, and weights while damp were secured on the rest, samples being taken to air dry in order to determine the correct weights. Samples also were taken of the grain for this purpose.

All of the sorgo and Sudan grass and bulk corn for feed still remain to be weighed.

Maximum temperature 73, minimum 14; precipitation .52 inch -mostly snow.

ARDMORE:

The past two weeks have been very unfavorable for the prosecution of fall farming operations. There has been more than a normal amount of precipitation for this season of the year with frequent showers and snow flurries. Up to the present date precipitation has been recorded eleven days during the month, and the total amount for the month has been 1.48 inches. The ten-year mean for the same month is 1.07 inches.

No plowing has been possible during the past week, and a considerable acreage remains to be plowed. It is doubtful whether this work can be completed this fall.

Final weights of steers used in the grazing experiment were obtained today. All pastures showed a loss on the average of from 50 to 80 pounds per steer during the past 30 days. The least loss was in the 150-acre pasture where there still is an abundance of feed.

ARCHER:

During the past twenty-seven days of October there have been fourteen days on which precipitation has been recorded, the total being 3.24 inches. The storm which occurred during the latter part of this week consisted of 1.13 inches of rain and .67 inch of water in the form of snow, totalling 1.80 inches. After re-shocking the small cereals in order to get them dry the barley and oats from the Dry-Land plats were threshed. There will be heavy cereal losses in this region due to the excessive rains during this month. At present the weather is clear with wind and temperature right for clear weather. However, there is about six inches of snow on the level. The snow is being removed for the second time from the remaining shocks.

Maximum temperature 69, minimum 8, precipitation 1.80 inches.

COLBY:

Weather conditions have remained damp and wet during the week. Approximately three inches of moisture have fallen this month to date. The weather at all times has been damp. The first frost, which occurred the morning of the 13th, killed most of the vegetation. The damp weather immediately following has tended to keep all leaves on the vegetation.

Milo will undoubtedly give us some of our largest yields for this crop ever produced on the station. Early Sumac sorgo, which was grown for dry feed and for ensilage, gave us approximately ten tons of green matter to the acre. Reed's kafir, which was also used for silage, gave us approximately 12 tons to the acre of green matter. All three of our silos are filled completely full of Early Sumac sorgo, Reed's kafir, and Dwarf Yellow milo. Our ensilage went into the silos in excellent shape. Approximately two-thirds of our Dwarf Yellow milo is as jiucy as any of our sweet sorgos.

Winter wheat looks fine. There is ample moisture in all preparations to carry the wheat through the winter in excellent shape.

The damp weather has delayed corn shucking until it will be two weeks before farmers will start to harvest. There is some wheat seeding to be done yet. Wheat threshing is only about half completed at the present time over the county. Less than one week has been put in this month by commercial threshers.

Minimum temperature to date, 22 degrees.

GARDEN CITY:

The past week has been another damp dreary one as it has rained or been foggy most of the time. The first two days were nice and some field work was accomplished. Although the precipitation for the week totaled only .62 of an inch, the weather was such that little field work could be accomplished.

Garden City, continued:

Practically all the sorghum on the Dry Land project was cut and is now in the shock. A few plats in the date of seeding test and six plats in the seedbed experiment are still standing.

The weather has been such this fall that the sorghums did not ripen as they should. Very little favorable weather has occurred since the time the crop started to ripen. Frost was received at a later date than normal, but even then most of the plats were caught by it. The yield of most milo plats will be equal to or above the average. The yields of kafir will also be good in most cases, although some of it is rather immature.
Maximum temperature 68, minimum 31; precipitation .62 of an inch.

DALHART:

Another wet week has passed. One day this week was fairly warm with plenty of sunshine. The remainder of the week has been stormy. Today, Saturday, started off as if it might be clearing off but has clouded over again. The precipitation during the week has not amounted to much but has been sufficient to stop all field operations. The greatest amount falling during one day this week was .44 inch, minimum .04 inch. On Thursday the rain turned to snow about noon and it continued to snow hard until sometime during the night. The ground was white until about noon Friday. The temperature dropped to 30 during that night but the damage was not noticeable. Field crops that remain uncut are just as green as before. Leaves are still green on the trees and many flowers are still blooming.

All of the experimental harvesting as well as field crops were finished before the storm prevented harvest. There is nothing remaining to harvest on the station except a few discard rows which are not on the plats.

During the week while no field work could be done, the time was well spent in seeding broomcorn and threshing cut cowpea seed and cleaning same. The men are able to do field work today, Saturday, finishing the shocking which could not be done sooner on account of the rain. It is quite likely that this will have to be reshocked in a few days in order to let it dry out without spoiling.

The rainfall record for this section has exceeded 30 inches already and has a little over two months to go. To date the total rainfall is 30.21 inches. Total for this week is .63 inches. Maximum temperature 71, minimum 30. There has not been what might be termed a killing frost here yet. It seems to be a record year on about three counts, namely, frost in the spring, rainfall and frost in the fall. The delay of the killing frost this fall is not benefiting the crops on account of so much moisture.

Dalhart, continued:

The crops are making too much growth to mature the grain. The increase field of milo is not mature yet and may not get through. It was planted late, about the first week in July, and on listing, so it is a little later than it would have been on surface planting. Many farmers are experiencing the same thing.

BIG SPRING:

The weather during the past two weeks has been very adverse to the accomplishment of much field work, for it has been damp and cloudy most of the time. Although little rain has fallen during this time, conditions have been wet enough so that no threshing or heading of milo could be done. A few days of sunshine dried the cotton off enough so that it could be picked.

Cotton on the station has just about all opened, so one more light picking will finish this work for the season. Yields for this crop will be very satisfactory this year; the average of all the plats will be about a half a bale per acre.

A heavy second growth of some of the sorghums has been made this fall; in fact a second crop of feterita has matured on some of the dates. It was hoped that threshing could be started next week, but the recent rains will cause the starting of that work to be delayed for several days.

Maximum temperature 65, minimum 38; precipitation .43 inches.

TUCUMCARI:

While no frost has been received, temperatures of 33 have caused harvesting to be rushed when possible the past week. Precipitation has been received four days of the week and rain, snow and mist fell steadily all of Wednesday night, Thursday, and that night. All kafir plats in the north field were cut early in the week, although much of the grain was not fully mature. Friday morning the grain and corn binder were put in the fields and increase rowed Sumac cane, Pink kafir, and Sudan grass increase were cut, as well as a number of plats. There are now standing about thirty variety and date plats, and spacing plats of dawn kafir; in case frost is received, these plats can be cut before seriously damaged.

Cotton has opened to some extent and the rotation plat was picked this week, yielding at the rate of 150 pounds seed cotton per acre. There should be another heavier picking on this plat. Cotton in the spacing and variety plats is much poorer and apparently some of this will not open sufficiently to warrant picking.

Tucumcari, continued:

Threshing will be exceptionally late this year; four milo plats were threshed early in the week and were so tough that threshing was discontinued. Milo which was headed six weeks ago and placed in compartments in the machine shed is still tough and sappy, due to the cool, damp weather. Since plats cut in September are still tough, one wonders when it will be possible to thresh kafir and variety sorghums cut the last week. Threshing will apparently be an all-winter job. It will doubtless be necessary, after frost, to head north field milo plats a second time, for many late suckers have put out small, late heads, many of which will contain ripe seed.

Maximum temperature 71, minimum 33; precipitation 0.62 inch.
Average wind velocity 6.3 miles per hours.

MANDAN:

Arboriculture.

The fall work will be completed with the making of the required number of Northwest poplar cuttings, which are well in hand and should be finished before the end of the month.

Agronomy.

The past week was fairly favorable for field work. The weather has been rather cool for most of the week.

Corn varieties were husked during the week. The yields were from about 30 bushels per acre for Square Deal Yellow dent to 67 bushels per acre for Rainbow Flint.

Field husking of corn in the feed field has started. The total yield from the 10-acre field should be from four to five hundred bushels.

The experiment field work for the season is practically completed.

Snow fell part of the day of the 25th, but not enough to cover the ground.

Maximum temperature 68, minimum 17; precipitation .01 inch.

Cooperative Grazing Experiment.

The grazing experiment closed for the season on October 23. The total gains for the season were less than in 1922, but were about average for the 100-acre and the 70-acre pastures, and below average for the other pastures.

Mandan, continued:

The following table shows the gains or losses for October and for the season. The grazing in the brome-grass pasture was all new growth. While the amount of feed was not abundant, it appeared that there was more available feed in the brome-pasture than in the rotation pasture.

Pasture	No. Steers	October Gains or loss Lbs. per head	Season Gains Lbs. per head
100-acre	10	2.5	281.0
70-acre	10	0	291.5
50-acre	10	-40.0	212.5
30-acre (on reserve)	10	4.0	*150.5
Rotation (70 acres)	16	4.4	250.7
Brome (35 acres)	16	-45.0	**169.7

* Gain for 115 days on 30-acre pasture.
** -gain for 140 days on brome.

BELLE FOURCHE:

Field work was possible on only two days during the week. On the 23rd the soil became dry enough so that plowing out potatoes was possible. On that day half of the rows on the two dry land plats and half of the rows on four irrigated plats were harvested. Picking up the potatoes was a difficult task as it was necessary to clean the gumbo from each individual tuber. The yield of potatoes on the dry land plats was about 250 bushels per acre.

On the night of the 23rd rain fell, and for several days rain and snow fell intermittently. Most of the snow has now disappeared but the ground is frozen. However, it is not believed that the soil froze to a depth great enough to injure many of the potatoes.

None of the beets on the irrigated rotations have been harvested and only a few plats of potatoes have been worked on. With favorable weather there is still time to harvest the beets. Whether the potatoes can be dug is a question. At the present time one row is being dug by hand on each potato plat for a basis for calculating yields should the harvesting of the entire plats be impossible.

Bellefourche, continued:

The rainfall for the season to date exceeds the maximum previously recorded for an entire year. The distribution has been as follows:

January	.22 inch
February	.23 "
March	.32 "
April	.82 "
May	2.31 inches
June	3.31 "
July	4.54 "
August	5.35 "
September	5.95 "
October to date	3.14 "
Total	26.69 inches

The rainfall for each month up to October was greater than that of the preceding month.

Maximum temperature 74, minimum 16; precipitation 1.03 inches.